Saskatchewan
Parks and
Renewable
Resources

Forestry Division News

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1984 DUTCH ELM DISEASE SURVEY IN SASKATCHEWAN

The Saskatchewan Dutch Elm Disease (DED) Survey is a co-operative program carried out by personnel in the Silviculture Section of the Forestry Division and the PFRA Tree Nursery at Indian Head. Yearly surveys have been conducted since 1976 to detect the spread of DED into Saskatchewan and to determine the distribution of the native Elm Bark Beetle (NEBB) Hylurgopinus rufipes, and the European Elm Bark Beetle (EEBB) Scalytus multistriatus. In Canada, the NEBB is the main carrier of Dutch Elm Disease while EEBB is a secondary carrier. The reverse is true in the United States.

Dutch Elm Disease is increasing dramatically in neighboring areas such as Montana, North Dakota and Manitoba. It is estimated that DED has already killed over 80 per cent of the native American Elm trees in some areas along river banks and around cities in southern Manitoba. If DED enters Saskatchewan at some point in the future, we want to know where and when so that remedial steps can be taken.

The 1984 survey for DED and Elm Bark Beetles was conducted by eight surveyors from the Division and supervised by the PFRA Tree Nursery. The surveying crew counted and inspected American Elm trees in almost all communities in the province north to Prince Albert. The survey was more concentrated in the area south of Highway #1 and east of Swift Current because this is where DED is most likely to spread first. Saskatoon was surveyed by Division crews, while Regina was surveyed by city park staff.

The DED survey began on July 5, after an orientation day in Brandon, Manitoba, and was completed by August 1, 1984. This year the American Elm in general appeared in poor health mainly due to drought conditions. One hundred and twenty six trees displayed flagging symptoms and were thus sampled. Seven of the 126 trees sampled exhibited staining of the wood and were tested in the laboratory for the presence of the fungus Ceratocystis ulmi which causes DED. Three of the seven samples did not have any disease and the remaining were diagnosed as having Dothiorella or a combination of Dothiorella and Alternaria fungal infection. The diagnosed samples were from Moose Jaw and Saskatoon. No case of DED was found this year.

A total of 95 communities were selected as trapping sites to determine the distribution of the NEBB and EEBB in the province. Three types of traps were used in the survey and the results are shown in the following table:

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Type of Trap	No. of Locations	Results
1. Cardboard sheet with sticky substance and pheromone for EEBB (at present there is no long range pheromone for NEBB).	98	58 NEBB recovered from 8 locations. Preeceville and Maryfield are new locations this year.
2. Cardboard sheet with sticky substance only.	80	
3. A pair of firewood sized American Elm logs.	80	NEBB and galleries (passages formed in wood by beetles) found in Carnduff, Redvers, *Maryfield, *Preeceville, *Port of Carievale and *Foam Lake. (* new locations for this year).

In 1982, the first EEBB was recovered from a pheromone trap placed at Port of Big Beaver. In 1984, the EEBB was not found at this site or any other location where the pheromone traps were placed throughout Saskatchewan.

A number of "hazardous trees" showing dead or dying branches were noted this year and letters will be sent to the communities in which they were found, asking them to attend to these trees by pruning, etc.

Summary:

- no confirmed case of DED
- NEBB existing in at least 14 various locations
- no EEBB
- trees in poor condition due to drought conditions in 1984

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Table 1. Results of the DED survey of American elms in Saskatchewan in 1984.

Location	# of times surveyed	# of trees sampled	# of trees with staining	# of stained samples confirmed as:
Alameda	1	2		
Assiniboia	1	2		
Avonlea	1	1		
Balgonie	1	1		
Battleford	1	1		
Benson	1	1		
Bredenbury	1	1		
Bromhead	1	1		
Bruno	1	1		
Canora	1	3		
Carlyle	1	1		
Carnduff	1	1		
Carrot River	1	1		
Churchbridge	1	2	1	nothing
Codette	1	1		
Craik	1	1		
Cupar	1	1		
Drake	1	1		
Esterhazy	1	2		
Estevan	2	6		
Foam Lake	1	1		
Glenavon	1	1		
Gravelbourg	1	1		
Grayson	1	1		
Humboldt	1	1		
Indian Head	1	1		
Kamsack	1	6		
Kindersley	1	1		
Lafleche	1	1		
Lake Alma	1	1		
Lanigan	1	1		
Leader	1	1		
Lebret	1	3		
Lemberg	1	2	1	nothing
Manor	1	1		
Maple Creek	1	1		
Markinch	1	1		
Maryfield	1	1		
Melfort	1	8		
Melville	1	1		
Midale	1	2		
Mikado	1	1		
Moose Jaw	1	5	1	Dothiorella + Alternaria
Moosomin	2	4		
Nipawin	1	1		
North Battleford	1	3		
Orkney	1	1		
Outlook	1	2	1	nothing
Oxbow	1	3		
Parry	1	1		

Table 1 continued

Pense	1	1		
Porcupine Plain	1	1		
Preeceville	1	1		
Prince Albert	1	2		
Redvers	1	1		
Rockglen	1	1		
Saskatoon	1	13	4	1=nothing; 3=Dothiorella
Semans	1	1		
Spalding	1	1		
Swift Current	1	2		
Theodore	1	1		
Tisdale	1	1		
Tyvan	1	1		
Unity	1	1		
Vibank	1	1		
Wadena	1	1		
Wapella	1	1		
Yorkton	2	6		
Total		126	8	

Table 2. Towns or cities with more than 1,000 American elms (1984 Survey)

Town/city	Number of American elms
Canora	1,211
Estevan	1,011
Kamsack	1,411
Kindersley	1,165
Maple Creek	1,112
Melfort	1,734
Moose Jaw	3,572
North Battleford	1,595
Prince Albert	2,111
Rosetown	1,230
Saskatoon	17,950
Shaunavon	1,525
Swift Current	2,218
Weyburn	1,319
Yorkton	2,440

Total trees surveyed in Saskatchewan in 1984, was 78,807 (excludes Regina).

Table 3. Number of native elm bark beetles (NEBB) and European elm bark beetles (EEBB) caught in random flight traps, trap logs and pheromone traps in various locations in Saskatchewan in 1984

Location	Number of traps		Number of NEBB in		Number of bark beetles in pheromone traps	
	Random flight	Pheromone	Random flight traps	Trap logs	NEBB	EEBB
Abernethy	1	-	M	M	-	-
Antler	1	2	0	0	0	0
Arran	1	1	0	0	0	0
Assiniboia	1	2	0	0	0	0
Avonlea	1	1	0	0	0	0
Battleford	1	-	0	0	-	-
Bengough	1	1	0	0	0	0
Bienfait	1	1	0	0	0	0
Big Beaver	1	2	0	0	0	0
Broadview	1	-	0	0	-	-
Canora	1	-	0	0	-	-
[2]Carlyle	1	1	1	0	1	0
[2]Carnduff	1	1	0	1	1	0
Churchbridge	1	1	0	0	0	0
Coronach	1	1	0	0	0	0
[2]Crooked Lake	-	2	-	-	0	0
Davidson	1	-	0	0	-	-
Duck Mtn. Park	-	1	-	-	0	0
Edenwold	1	-	0	0	-	-
Esterhazy	1	1	0	0	0	0
[2]Estevan	-	4	-	-	2	0
[2]Fairlight	1	1	0	0	0	0
Fleming	1	2	0	0	0	0
[3]Foam Lake	1	-	0	1	-	-
Fort Qu'Appelle	1	-	0	0	-	-
[2]Gainsborough	-	3	-	-	1	0
Grand Coulee	1	-	0	0	-	-
Gravelbourg	1	-	0	0	-	-
Grenfell	1	-	0	0	-	-
Gull Lake	1	-	0	0	-	-
Humboldt	1	-	0	0	-	-
Indian Head	2	1	0	0	0	0
Kamsack	1	1	0	0	0	0
Kelvington	1	-	0	0	-	-
Kenosee Lake	1	1	0	0	0	0
Kipling	1	-	0	0	-	-
Lampman	1	-	0	0	-	-
Langenburg	1	1	0	0	0	0
[2]Lanigan	1	-	0	0	-	-
Lloydminster	1	-	0	0	-	-
[2]Lumsden	1	2	0	0	0	0
Manitou Beach	1	-	0	0	-	-
Maple Creek	1	-	0	0	-	-
[3]Maryfield	1	2	0	1	0	0
Melfort	1	-	0	0	-	-
Melville	1	2	0	0	0	0
[2]Midale	1	1	0	0	0	0
Milestone	1	1	0	0	0	0

Table 3-(Cont'd)

Minton	1	1	0	0	0	0
[2]Moose Jaw	-	3	-	-	0	0
Moosomin	1	1	M	M	0	0
Nipawin	1	-	0	0	-	-
Norquay	1	-	0	0	-	-
North Battleford	1	-	M	M	-	-
Northgate	1	1	0	0	0	0
[2]North Portal	-	2	-	-	0	0
Oungre	1	1	0	0	0	0
[2]Outlook	-	2	-	-	26	0
[2]Oxbow	-	3	-	-	1	0
[2]Pangman	1	1	0	0	0	0
Pilot Butte	1	-	0	0	-	-
[1]Port of Big Beaver	1	3	0	0	0	0
[2]Port of Carievale	1	2	0	1	0	0
Port of Coronach	1	1	0	0	0	0
[2]Port of Estevan	1	2	0	0	0	0
Port of Oungre	1	2	0	0	0	0
Port of Torquay	1	2	0	0	0	0
[3]Preeceville	1	-	0	1	-	-
Prince Albert	1	-	0	0	-	-
Radville	1	-	0	0	-	-
[2]Redvers	1	1	0	1	0	0
[2]Regina	-	4	-	-	0	0
Regway	1	1	0	0	0	0
Rocanville	1	1	0	0	0	0
[2]Poche Percee	-	3	-	-	24	0
Rockglen	1	1	0	0	0	0
[2]Round Lake	-	2	-	-	0	0
Saskatoon	1	4	0	0	0	0
Shaunavon	1	-	0	0	-	-
[2]Spy Hill	1	1	0	0	0	0
[2]Stoughton	1	1	1	0	0	0
Swift Current	1	-	0	0	-	-
Tantallon	1	2	0	0	0	0
Togo	1	1	0	0	0	0
Torquay	1	1	0	0	0	0
Wakaw	1	-	0	0	-	-
Wawota	1	-	0	0	-	-
Welwyn	1	1	0	0	0	0
West Poplar River	1	1	0	0	0	0
Weyburn	1	2	0	0	0	0
Whitewood	1	-	M	M	-	-
[2]Wolseley	1	2	0	0	0	0
Wroxton	1	1	0	0	0	0
Wynyard	1	-	0	0	-	-
Yorkton	1	2	0	0	0	0

M-Traps missing.
[1]EEBB previously found at this location.
[2]NEBB previously found at this location.
[3]New record for NEBB at this location.

Table 4. Locations in Saskatchewan where the native elm bark beetle (NEBB) or the smaller European elm bark beetle (EEBB) have been trapped

NEBB	EEBB
Carlyle	Port of Big Beaver
Carnduff	
Crooked Lake	
Estevan	
Fairlight	
Foam Lake	
Gainsborough	
Lanigan	
Lumsden	
Maryfield	
Midale	
Moose Jaw	
North Portal	
Outlook	
Oxbow	
Pangman	
Port of Carievale	
Port of Estevan	
Preeceville	
Redvers	
Regina	
Roche Percee	
Round Lake	
Spy Hill	
Stoughton	
Wolseley	

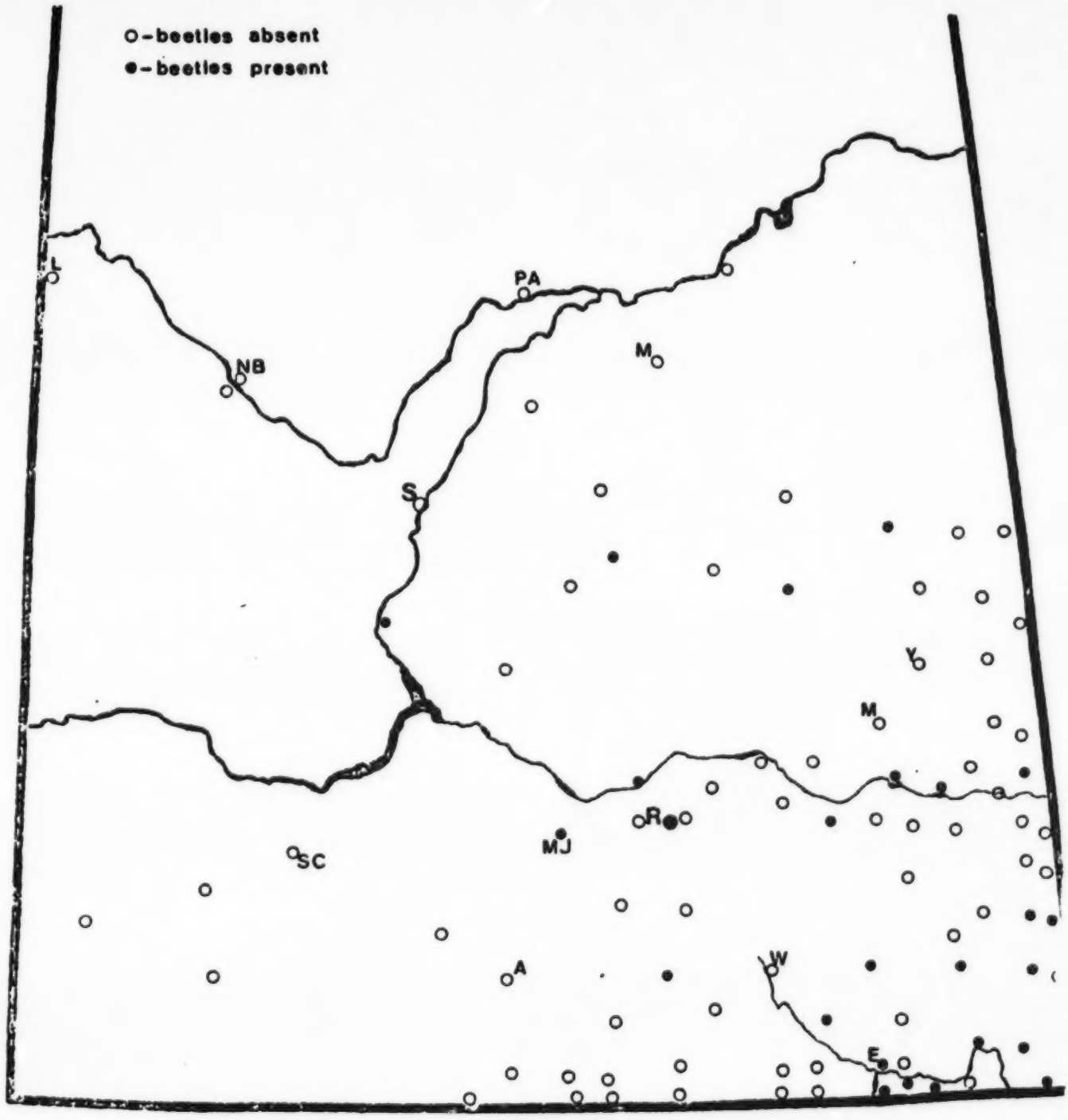

Figure 1. Trap locations for the native elm bark beetle (*Hylurgopinus rufipes*) 1980-1984.

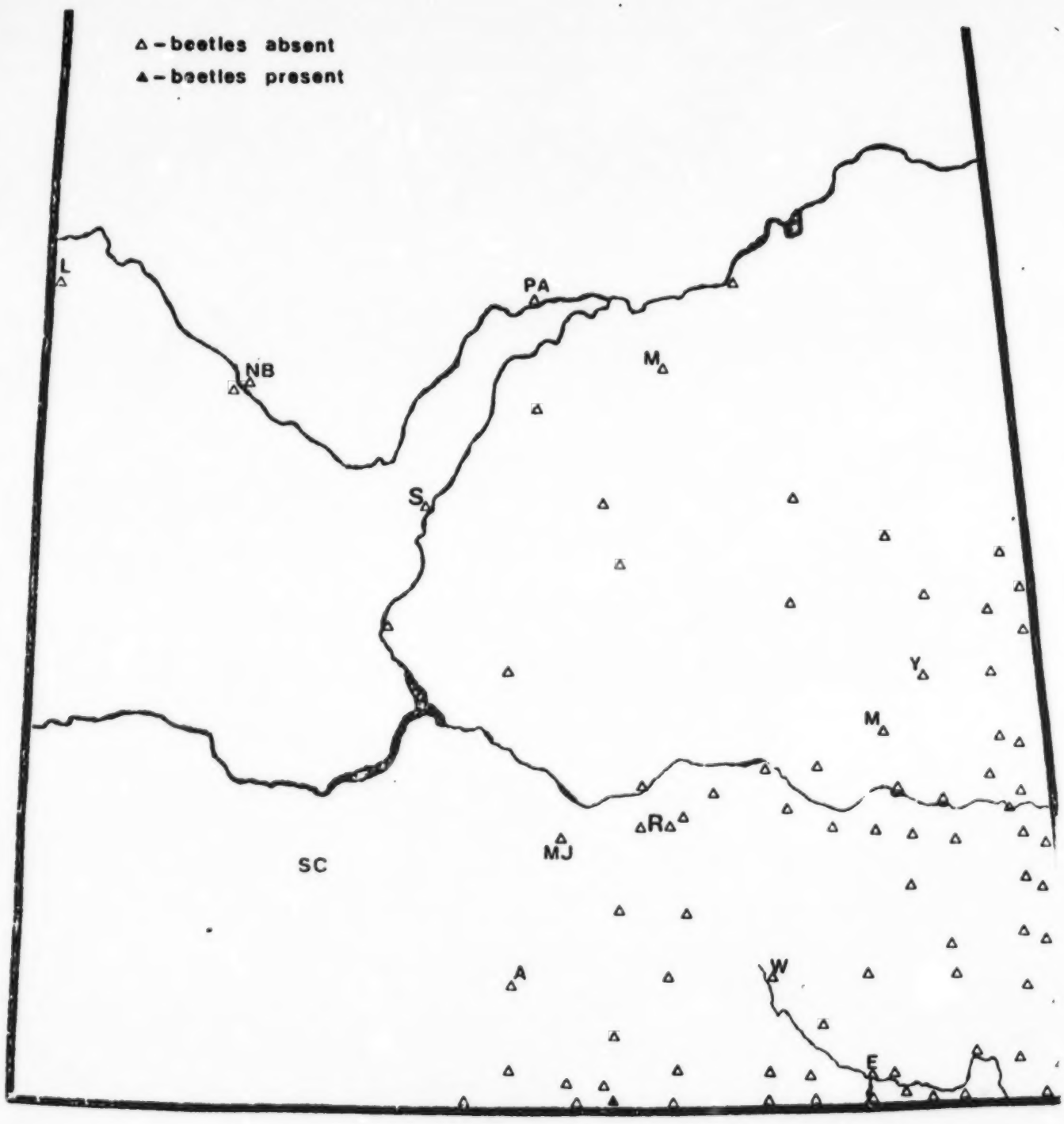

Figure 2. Trap locations for the smaller European elm bark beetle (*Scolytus multistriatus* 1981-1984.

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